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Our Journey: Designing and utilising a tool to support students to represent their study journeys

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Abstract

Students have diverse circumstances, experiences, and goals. The challenges they face are often invisible to the educators and staff working to support them. In this paper we describe the design of a novel tool to support each student to represent their own study journey. This has been created with the participation of students and other stakeholders throughout the design process, and was inspired by previous research on the barriers faced by disabled students and the impacts of these on their experiences and attainment. The tool (Our Journey) can be used online or in a printed form. The basis of the design is the creation of cards that describe particular events that were important to the student. Students choose an event type and an emotional state, and provide short descriptions. Through this they build a structured narrative that has several potential uses. Our Journey provides an accessible and engaging means for dialogue and reflection on the nature of study journeys which could be beneficial for students. Journey data collected at scale could provide insights into areas such as student mental health and wellbeing, challenges commonly faced in study, and a holistic view of the lives of students.

Keywords: Student journey, student voice, feedback, participatory design, accessibility, inclusion, mental health, wellbeing, widening participation, learning analytics

Introduction

Students have diverse circumstances and goals. Their experiences of education include challenges and achievements that are often invisible to the educators and staff working to support them at any given time. The impacts of important events on each student, and the ways in which they, as a person, change over time, are critical for the students yet are poorly understood in educational research and practice.

At the same time, it has become common for educational institutions to develop representations of the expected student journey, such as [1] and [2]. These representations tend to assume a common series of events that all students will experience in a particular order. These representations may become a key informational object for staff and students, but they struggle to account for individual variation in these journeys, or to encompass the full range of issues and life events that can impact on the student. They may instead only represent an institutional view of what should happen.

A participatory research activity prompted us to explore the possibility to support all students to be able to represent their own study journeys. Our aim was for this to be both as a means to empower students to communicate and reflect on their experiences, and to support educators and educational institutions to better understand these experiences.

We describe the process we adopted and our findings as we engaged with a range of stakeholders to understand how the tool should be designed and how it may be utilised. This includes the initial development of a paper-based version for face-to-face use, which then informed the development of a fully-functional online interactive tool. We will illustrate the features of the online tool along with initial findings from our exploration of the potential of the tool with students and staff.

Background

The development of Our Journey has been driven by a participatory approach to identifying issues for students and staff in working in higher education. At the same time, it has been informed by several strands of research and these help us to conceptualise how it can be used.

The design of the tool was prompted by prior research that focused on understanding support and challenges for disabled students. A participatory research activity conducted with the collaboration of The Open University's Disabled Students Group identified the need to investigate the administrative burdens placed on disabled students, including the multiplicity of complex application forms, needs assessments, and communications through specific channels that these students must engage with simply to reach a position where study was possible. Students noted that these burdens could have a range of impacts over time on their studies and their lives.

Following this, we devised and conducted a survey study that captured the relative challenge of common processes that students had to complete in the course of their studies, and the different impacts that administrative processes had on students. These included stress, time lost from study, and poorer grades in assignments [3]. While the survey approach allowed us to produce useful insights, it was difficult to use this to identify how multiple events unfolded over time and how these impacted on students. It is clear that students develop skills and strategies over time and also encounter different experiences of study as they go through different modules and life events [4]. This led to the conclusion that methods for understanding the events that students experience over time and the impacts of these would be valuable.

In Human-Computer Interaction and User Experience, the concept of 'trajectories' has developed to provide a theoretical underpinning to the study of user journeys as experiences that are designed to unfold over time and through virtual and physical spaces [5]. The student journey through a course of study can be considered as an extended experience of this kind. Given this lens, the trajectories framework offers three concepts that can help us to understand what a student journey is and how it could be represented [6].

Firstly, a 'Canonical' trajectory is an expression of the intended experience as it is designed to unfold. In the case of the student journey, the educational institution and its staff can be seen to design a canonical student journey that they expect students to follow (likely including events such as registration, induction, the completion of a number of modules within a qualification, and graduation).

There are many examples of visual representations of student journeys produced by educational institutions, such as those described in [1] and [2]. These are intended to be useful to create shared understanding for both students and staff. Depending on how they are used, these representations could be considered as a form of Boundary Object [7] [8] since they represent key information for students and for staff in a variety of roles. They are potentially used in different ways by these groups, yet because they are shared they provide for common ground between them. Given this important role, the ways in which these representational objects are created, and the ownership of them should be reflected upon.

Although a ‘canonical’ student journey representation can be valuable, it is not clear how this is grounded in the actual journeys of students. It could be aspirational or represent a limited view of how particular staff expect student journeys to occur. In this regard, a second concept in the trajectories framework is that there are differing ‘Participant’ trajectories [6]. This encompasses the idea that each individual can follow different paths through an experience or have different experiences due to events beyond their control. They may at times break from, and later re-engage with, an intended canonical trajectory. The study journeys of individual students are likely to diverge from the expectations of the institution. However, these may not necessarily be visible or easily understood, given the expectations of the institution that the canonical trajectory is going to be followed.

A further concept is that of ‘Historic’ trajectories. This highlights that data from participant trajectories can be captured and used in various ways. Participants could review their own trajectories and gain some further experience from this. Historic trajectories could also form part of the later experiences of others [6]. In terms of student journeys, we can see potential value of activities of representing, reflecting on, and sharing these journeys.

One notion leading to the concept of historic trajectories is the way in which interactions with digital systems leave traces of data that could be used to reconstruct the taken trajectory. This notion is also essential to the field of Learning Analytics, which uses data about learners from various sources to discover information and connections that can predict and advise around learning. Learning Analytics approaches have been devised and applied in The Open University for a range of purposes, including to compare success rates of different pathways taken through a qualification [9] and to identify modules that may present accessibility challenges for disabled students within their qualifications [10]. These approaches primarily use data gathered from university systems, such as student registration, engagement, and assessment data. However, it is noted in [10] that such data is not necessarily sufficient to create understanding of the challenges students faced, and that forms of self-reported data, such as student feedback from surveys, could augment this and help to explain the issues behind these findings.

More broadly, there is potential of new forms of self-reported data that focus on capturing change over time to augment the common forms of learning analytics that are captured by educational institutions. Challenging problems, such as the measurement of ‘Learning Gains’ made by students over the course of their studies [11], or of creating understanding of student mental health and wellbeing during points of transition, and in relation to many types of events over the course of the student journey [12], could benefit from new combinations of self-reported and behavioural data.

This literature and our prior research helped to articulate a gap in current methods and tools. We therefore aimed to investigate how students could be supported to represent their study journeys, including the challenges faced, in a way that would be valuable for institutions to understand and improve the study experiences.

Design process

Initial design stages

The initial stages of the project identified a range of inspirations, including ways in which journeys and trajectories were visually represented both in educational institutions (such as [1] and [2]). We also explored various representations of ‘user journeys’ used by User Experience researchers and designers (e.g. [13]). We found a number of these representations through a web-based review. These served to communicate the broad concept of the project to stakeholders, and aided discussions of a suitable design.

A workshop was held to clarify the vision and requirements for the tools. This included the participation of students, staff involved in student support roles, student union representatives, and staff at an external partner who offered mentoring and training to disabled students. Attendees were introduced to various representations of student or user journeys, asked to create their own representations in small groups, and then given space to discuss how they felt the tool could be designed and how it could be useful to them.

The workshop led to a set of conclusions that guided further work on the design of the tool. These included that that the tool should be:

- Flexible enough to represent a wide range of events, and to begin when the student wanted it to. This could include events before study had formally began (such as problems in getting information about a course or available support, or events that inspired a person to take up study).
- Useful for all students (not just disabled students, who were the original intended audience).
- Able to represent achievements and goals. In that way it would engage students by allowing them to show what they were working towards and to celebrate successes as well as challenges.
- Able to represent events such as breaks from study or withdrawal from a course as part of the study journey, not necessarily as a failure or end point. Events such as these may be seen as problematic but are part of student life and are necessary for many students who then later return to successful study.
- Compatible with students sharing their journeys. For example, by making journeys that were visually appealing, and possibly something that could be posted on social media or in student groups.
- Engaging and fun, potentially with benefits for learners as they could use the process of creating the journey to reflect on their studies and encourage them as they continued.

These outcomes guided the project team while working with a graphic designer to create a conceptual and visual design. Narratives of example student journeys, and our prior research [3] [4], were used to inform the design of the representational space. The outcome of this was a first version of the tool that could be used in face to face situations using cards and an A1 poster-sized board (see figure 1). This established the essential design described in section 4.

Workshops for feedback and refinements on initial design

We then hosted two workshops in which stakeholders were engaged in using these printed tools to produce and discuss journeys (see figure 2), as well as being shown a prototype of the online tool that was in the early stages of development. A longer workshop was held internally with externally invited participants, and a shorter version was held at a conference attended by educators and sector professionals.

Figure 1: Portion of an example journey showing event cards with emotions, descriptions and notes.

Figure 2: Creating journeys using the printed version of the cards and board design in a workshop

The workshop activities and discussions led to refinements to the tools including additional event types and emotions that were mentioned by participants in the created journeys. These included additional life events such as moving home, employment, and finances, and other experiences such as considering study, barriers, and repetition. Further emotions such as 'curious', and 'embarrassed'

were added. The workshop also led to a range of ideas and issues for the use of the journey tools. Key ideas included that:

- The tool could be responsive to students' input and could provide guidance and reminders to them or prompts for them to communicate with tutors or support staff if appropriate, depending on their input.
- Capturing journeys could help us to understand the emotional wellbeing and mental health of students in relation to particular types of events.
- Capturing journeys with disabled students could be a means to understand and improve the current practices for assessing the needs of those students.
- The creation of journey may have different effects for individuals. It could be cathartic, help with goal setting, or support self-advocacy and communication for needs. It could be a light-hearted or serious activity.
- Journeys could be shared with other students in similar positions to find others who might learn from the journey or be inspired by it.
- There could be sensitivities around sharing certain information through journeys if students felt this would be observed or assessed and that providing this data may have consequences.

Some of these are explored further in the Use Cases section, while others constitute future work for us as we conduct trials and further development of the tool.

Implementation

In this section we describe the current implementation of Our Journey in detail. The tool is available as a refined printed version and as an online tool. Both are openly-licenced and can be accessed from the Our Journey website [14]. Both are very similar, with the online tool having some additional features which are described below.

Interaction design

The basis of interaction with Our Journey is to add event cards to a journey board. Students choose an event type from a wide range of options. The current tool includes 29 event types covering the student experience in its broadest sense, everything from 'considering study', to 'assessment', to 'moving home'. The student can also provide a short text description of the event so that it is clear what happened. The tool also provides 18 emotions that can be linked to any of these events (for example, 'anxious', 'confident', or 'confused'). Finally, an optional text note can be added to any card to express additional reflections.

Although it is not competitive, Our Journey has a game-like aesthetic and journeys are intended to be visually appealing. In the online version of the tool, users can select the background and card colours, and can choose to remove some or all of the background graphics if they would prefer a simple representation.

Implementation of the online tool

Taking the graphics, layout, and conceptual design of the printed tool, we produced an online version using JavaScript. This allows the tool to run in most modern web browsers without any additional plugins, setup, or reliance on server-processing.

An interface was developed through which users can create or edit each card (see figure 3). The tool supports keyboard navigation and use with common assistive technologies such as screen readers

and voice recognition software. Accessibility and usability testing and further refinements will be made iteratively, as accessibility and inclusion are a key concern.

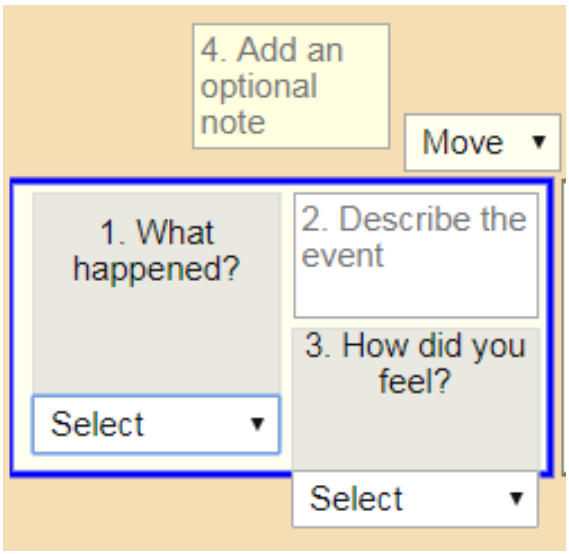

Figure 3: Journey card editor interface from the online tool

The standard version of the tool allows users to save a copy of their journey to a file, so that they can own their journey data and can decide if they want to share it (for example, via email or by upload to a forum). The file uses HTML to encode the journey, allowing it to be reloaded into the online tool. Further implementations, for example integration with a VLE or other data sources, may require journeys to be stored in a database, and could require authentication of users of the system to ensure privacy. The tool is flexible to these extensions. However, the approach of giving the user ownership of the journey is useful for exploring the possibilities of Our Journey without the overheads for implementation of these systems.

Figure 4: Part of a journey entered into the online tool

Use Cases

In this section we describe four ways in which Our Journey is being, or is planned to be, used. While the tool is novel, and this is not an exhaustive set of ideas, the aim is to show the breadth of expected uses which are to be explored and evaluated.

Interview tool

Our Journey can be used as a research tool in an interview setting to capture and quantify narrative information that a student participant shares with an interviewer. The student can do this independently, prior to the interview, in order to share their perception of their study journey that can then be discussed with the interviewer. Alternatively, the journey representation activity can form part of the interview, with the student providing a verbal narrative that the interviewer records into the Our Journey tool as they listen. Whichever method is used, the completed representation of the student's experience in the Our Journey tool provides a useful visual representation that can be referred back to, reflected on, used to direct further questioning or used as a point of comparison to other student journeys.

Gathering feedback and understanding at scale

As an online tool, Our Journey can be used to gather a large number of journeys from students. Such a dataset can then be used as a form of feedback from students at scale. This could augment existing forms of feedback such as surveys by providing a very different type of self-reported data.

A large sample could support various analyses of patterns in student behaviour and experience. A simple example could be to identify which types of events are more commonly found to have negative emotions attached to them. More complex analyses may look at sequences in journeys, to identify if combinations of events tend to occur and whether certain events tend to have impacts later in journeys. To enhance this, it may be useful to link journey data with other learning analytics data; such as linking assessment events in the journey with assessment data from student records.

Reflective learning activity

We are exploring the potential value of creating a journey as a learning activity for the student. A first learning activity using the tool has been devised in which students are asked to create a journey and to reflect on their goals and the challenges they have faced in their study to date. They are then asked to consider how they responded to challenges and whether they might respond differently to similar events in the future.

The learning outcomes of this are intended to be that students are better able to communicate about their experience of being a student, able to recognise and celebrate personal successes, and able to recognise and reflect on areas that they find challenging and means of overcoming these challenges. The activity can be undertaken by the individual, but there is an optional aspect of the activity where students can share and comment on each other's journeys through an online forum if they choose to.

Support mechanism

Representations of journeys have potential as a means to help students to communicate with their tutors or support staff. Students who find it difficult to explain their situation, or find that they have to repeatedly explain their needs to different people in order to get support, could use a representation as part of this dialogue. For disabled students, it is potentially very important that the events, challenges, goals and barriers expressed in their journey are functional (focusing on what has or will happen and the impacts of this), rather than medical (focusing only on conditions or impairments).

In our further development and research, we aim to create a responsive version of the tool through which the input of students, in an ongoing way throughout their studies, provides them with personalised guidance through their study journey. This could encourage effective communication with staff, provide links to relevant guidance, or prompt action when appropriate.

Conclusions

This paper has introduced the Our Journey tool and described the process and rationale for its creation. We have identified use cases for the tool that will help us to better understand and support students in their studies. Work to trial and evaluate these use cases is ongoing. We expect that the tools have wide potential applicability for educational institutions and learners. Interested parties are welcome to explore the tools themselves by visiting the website at https://iet-ou.github.io/our-journey/

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